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TRIGON
ENGINEERING CONSULTANTS, INC.

Geotechnical, Environmental,
Construction Materials, & Roofing Engineers

P.O. Box 18846•Zip 27419-8846•313 Gallimore Dairy Rd. Greensboro, N.C. 27409•(919) 668-0093

LETTER OF TRANSMITTAL

TO: Mr. Steve Kay
N.C. Groundwater Section
8025 North Point Boulevard
Winston-Salem, N.C. 27106-3295

Date: August 9, 1991

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1		Environmental Assessment Air Cargo Expansion/Waste Disposal Site	

SPECIAL INSTRUCTIONS: This report is submitted on behalf of the Piedmont Triad Airport Authority.

SIGNATURE J. Scott Pearson

Trigon Job No. 015-91-036

TRIGON
ENGINEERING CONSULTANTS, INC.

Geotechnical, Environmental,
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P.O. Box 18846•Zip 27419-8846•313 Gallimore Dairy Rd. Greensboro, N.C. 27409•(919) 668-0093

August 1, 1991

Piedmont Triad Airport Authority
Post Office Box 35005
Greensboro, NC 27425

Attention: Mr. Ted Johnson

Reference: Environmental Assessment
Area Cargo Expansion/Waste Disposal Site
Piedmont Triad International Airport
Greensboro, North Carolina
Trigon Job No. 015-91-036

Dear Mr. Johnson:

Please find enclosed the site investigation report describing the work performed, preliminary results and our recommendations associated with the site. The work performed was in accordance with Trigon Proposal No. 015-91-112-P.

Trigon Engineering Consultants, Inc. appreciates this opportunity to be of continued assistance to you during this phase of the investigation. Please feel free to contact us if you have any questions concerning this report.

Very truly yours,

TRIGON ENGINEERING CONSULTANTS, INC.

J. Scott Pearce
Staff Geologist

Nick Bogan, Ph.D., P.G.
Director of Groundwater Services

Eric N. Johnson, P.E.
Senior Project Engineer

JSP:NB:ENJ/asf
Enclosures

cc: Dane Rally, LPA Group

TABLE OF CONTENTS

1.0 SITE BACKGROUND AND SCOPE OF INVESTIGATION

Piedmont Triad Airport is in the process of expanding its air cargo handling area which has involved geotechnical soil test borings. While performing the geotechnical soil test borings, a petroleum odor was detected in several locations. Further investigation indicated that some of these locations had been used as burn pits by the Airport fire department during firefighting training exercises. As a result, the airport authority undertook additional investigation of soil and groundwater to further determine the nature and extent of the existing conditions. The previous environmental investigation included six hand auger borings, ten soil test borings, and the installation of five groundwater monitoring wells. The results of the previous fieldwork (Refer to Trigon report dated May 7, 1991) indicated that there were areas of contaminated soil and groundwater. Areas which required additional investigation included the burn pits, groundwater, surface water and soils in the wetland area.

2.0 FIELD ACTIVITIES

During this phase of the investigation, Trigon performed five (5) soil test borings by the three burn pits, installed four (4) piezometers, retrieved one (1) surface water and one (1) soil sample from the wetland area, investigated the solid waste by MW-4 and performed test trenches, and observed the removal of petroleum impacted soil.

2.1 SOIL TEST BORINGS

Trigon mobilized a CME 45 truck mounted drill rig to the site on May 10, 1991. Preceding drilling activity at the site, the drill rig and auger tools were decontaminated with a high pressure steam cleaner to prevent possible introduction of contamination to the site. During the boring activity, the drilling rig and tools were decontaminated using a high pressure steam cleaner between each hole to prevent the possibility of cross contamination of bore holes. Soil samples were retrieved by means of a split spoon sampling device during drilling. The split spoon was decontaminated in a solution of Alconox detergent and distilled water between samples and steam cleaned between each boring.

Trigon made five (5) test borings (B-1 - B-5) at the site adjacent to the three burn pits (Figure 2). The soil test borings were advanced with 2-1/4 inch inside diameter hollow stem augers (HSA) and by driving a split spoon sampler for retrieval of soil samples (Appendix A).

The five soil test borings were located adjacent to the three burn pits to determine the lateral extent of petroleum impacted soil. The depths of the soil test borings range from 8-10 feet with split spoon sampling at 2.5 foot intervals. One soil sample per soil test boring was selected based on the approximated depth of the groundwater table and analyzed for total petroleum hydrocarbons (TPH) by EPA methods 3550 and 5030.

The soil samples were screened in the field with an organic vapor analyzer (OVA) for volatle organics (Table 1). The OVA operates by flame ionization detection (FID). OVA screening for the soil samples

revealed 0 to 2 parts per million (ppm). After the samples were screened in the field, they were placed in laboratory-prepared containers for shipment to a North Carolina certified laboratory for analysis. Chain of custody records were kept throughout the sampling, transportation and analysis of the soil samples.

2.2 PIEZOMETER INSTALLATION

On May 24, 1991 Trigon mobilized a mobile B-61 truck mounted drill rig to the reference site for the installation of four (4) piezometers (P-1 - P-4). Preceding drilling activities at the site, the drill rig and tools were decontaminated with a high pressure steam cleaner to prevent the possible introduction of contamination to the site. During the boring activities, the drill rig and tools were decontaminated using a high pressure steam cleaner between each hole to prevent the possibility of cross-contamination of bore holes. Soil samples were retrieved by means of a split spoon sampling device during drilling (Appendix A). The split spoon was decontaminated with a solution of alconox detergent and distilled water between samples and steam cleaner between each boring.

Trigon installed four groundwater monitoring piezometers at the site (Figure 2). One soil sample was taken from each piezometer installed for analysis of total petroleum hydrocarbons. The soil sample was retrieved approximately at the soil groundwater interface zone. This was done in an effort to determine whether petroleum hydrocarbons are present in the soil which could cause potential groundwater impact.

The soil samples were screened in the field with an OVA for volatile organics (Table 2). OVA screening for the soil samples revealed 0-0.6 parts per million. After the samples were screened with the OVA in the field, they were placed in laboratory prepared containers for shipment to a North Carolina certified laboratory for analysis. Chain of custody records were kept throughout the field sampling, transportation, and laboratory analysis.

2.3: WETLAND AND TEST TRENCHES

A representative of Trigon retrieved one surface water sample and one soil sample from the wetland area on May 30, 1991. The surface water sample (SW-1) was retrieved by placing the laboratory prepared sample container in the saturated zone (surface) allowing it to fill with water. The surface water sample was taken adjacent to groundwater monitoring well MW-4 (Figure 2). Additionally, in the same area where the surface water sample (SW-1) was taken, a hand auger was used to retrieve a soil sample. Preceding the hand auger boring, the hand auger was decontaminated in a solution of distilled water and Alconox detergent. The hand auger soil sample (HA-1A) was retrieved and composited from 0-1.5 feet below the surface of the ground and analyzed by toxic characteric leachate procedure (TCLP) for RCRA metals.

The surface water and soil samples were screened in the field with an OVA for volatile organics (Table 3). OVA screening for the surface water sample (SW-1) and the soil sample (HA-1) revealed 0 and 0.2 parts per million, respectively. After the samples were screened in the field, they were placed in laboratory prepared containers for shipment to a North Carolina certified laboratory for analysis. Chain of custody

records were kept throughout the field sampling, transportation and laboratory analysis.

Adjacent to groundwater monitoring well MW-4, Trigon observed the excavation of test trenches. The test trenches were excavated in an area where solid waste was placed on the ground surface in an area where asphalt pavement and construction debris was placed as fill material (Figure 2). The solid waste material on the groundsurface consisted of construction debris in the form of piping, tires, concrete, cable, solid waste, etc. The test trench which was excavated in the fill material revealed asphaltic pavement, concrete, lumber, etc. During the test trench operations, no material was present that would appear to cause a significant impact to the site. The soil test trenches were screened with an organic vapor analyzer. The OVA readings ranged from 0-0.2 parts per million (Table 3). No laboratory samples were taken from the solid waste on the ground surface or from the construction debris used as fill material.

2.4 SOIL REMOVAL

A representative of Trigon observed the removal of approximately 2900 cubic yards of petroleum impacted soil during the period of May 31 through June 6, 1991. The soil was removed from the three burn pits (BP-1, BP-2, BP-3) and from the vicinty of groundwater monitoring well MW-3 (Figure 3). The impacted soil removed from the project area is in temporary storage at the airport. The temporary stockpile area was prepared in accordance with guidelines issued by the division of Environmental Management's Groundwater Section. After the impacted soil was removed from the burn pits and from the area around monitoring well MW-3, soil samples were retrieved on June 6, 1991 from the bottom of the excavations. Two soil samples were taken from each excavation zone for analysis of total petroleum hydrocarbons. The soil samples were screened in the field with an organic vapor analyzer for volatile organics (Table 4). OVA screening for the soil samples revealed 0-300 parts per million. After the samples were screened in the field they were placed in laboratory prepared containers for shipment to a North Carolina certified laboratory for analysis. Chain of custody records were kept throughout the field sampling, transportation and laboratory analysis.

3.0 HYDROGEOLOGY

The groundwater depths at the site varied from 6.9 feet (MW-3) to 11.7 feet (MW-1) beneath the ground surface. These measurements were made on June 5, 1991. Additionally, the elevations for the piezometers installed were measured and groundwater depths were taken for the piezometers installed. The groundwater depths for the piezometers ranged from 8.2 feet (P-1) to 10.0 feet (P-3) beneath the ground surface. The additional groundwater measurements taken on the site indicate that the groundwater appears to be migrating in an easterly direction (Figure 4). The groundwater is apparently discharging downslope to the east of MW-4 in the wetland area. Groundwater flow rates are in the process of being determined for this site.

4.0 LABORATORY ANALYSIS

The soil samples retrieved adjacent to the burn pits in the soil test borings B-1 through B-5 were analyzed for total petroleum hydrocarbons (TPH). The laboratory results as reported by Industrial and Environmental Analysts (IEA) indicated that none of the samples contain a petroleum hydrocarbon blend at concentrations above the quantitation limit of two milligrams per kilogram (mg/kg) (Appendix B).

The soil samples retrieved during the installation of the piezometers were analyzed for total petroleum hydrocarbons. The laboratory analysis as reported by IEA did not detect petroleum hydrocarbons concentrations above the quantitation limit of 2 mg/kg (Appendix C).

The soil sample taken in the wetland area by groundwater monitoring well MW-4 was analyzed by toxic characteristic leachate procedure for RCRA metals. The analysis as reported by IEA revealed barium at 1.4 milligrams per liter (mg/l) and lead at 0.032 mg/l (Appendix D). Additionally, a water sample was taken in the same area for analysis of total petroleum hydrocarbons. The laboratory analysis as reported by IEA revealed a petroleum hydrocarbon blend with a distillation range similar to varsol with a concentration of 1.7 mg/l.

The soil samples taken after the petroleum impacted soil was removed from the three burn pits and in the vicinity of groundwater monitoring well MW-3 were analyzed for total petroleum hydrocarbons. Two soil samples were taken from each burn pit and the area by MW-3. The analysis as reported by IEA did reveal petroleum hydrocarbons in burn pit #1 and in the area around MW-3. The petroleum hydrocarbons in burn pit #1 were similar to #2 fuel with concentrations in sample BP-1A of 33 mg/kg and in sample BP-1B of 34 mg/kg (See Appendix E). The analysis of the soils by MW-3 revealed petroleum hydrocarbons. The concentration in sample MW-3A revealed 750 mg/kg which was similar to varsol and 110 mg/kg which was similar to #2 fuel. The analysis of sample MW-3B revealed less than 2 mg/kg of petroleum hydrocarbons. The analysis of the soil samples from burn pits #2 and #3 did not reveal petroleum hydrocarbons and concentrations were not above the quantitation limit of 2 mg/kg (Appendix E). The soil sample taken beneath the former hanger (FH) building was analyzed for total petroleum hydrocarbons. The analysis as revealed by IEA indicated concentrations less than 2 mg/kg quantation limit for petroleum hydrocarbons.

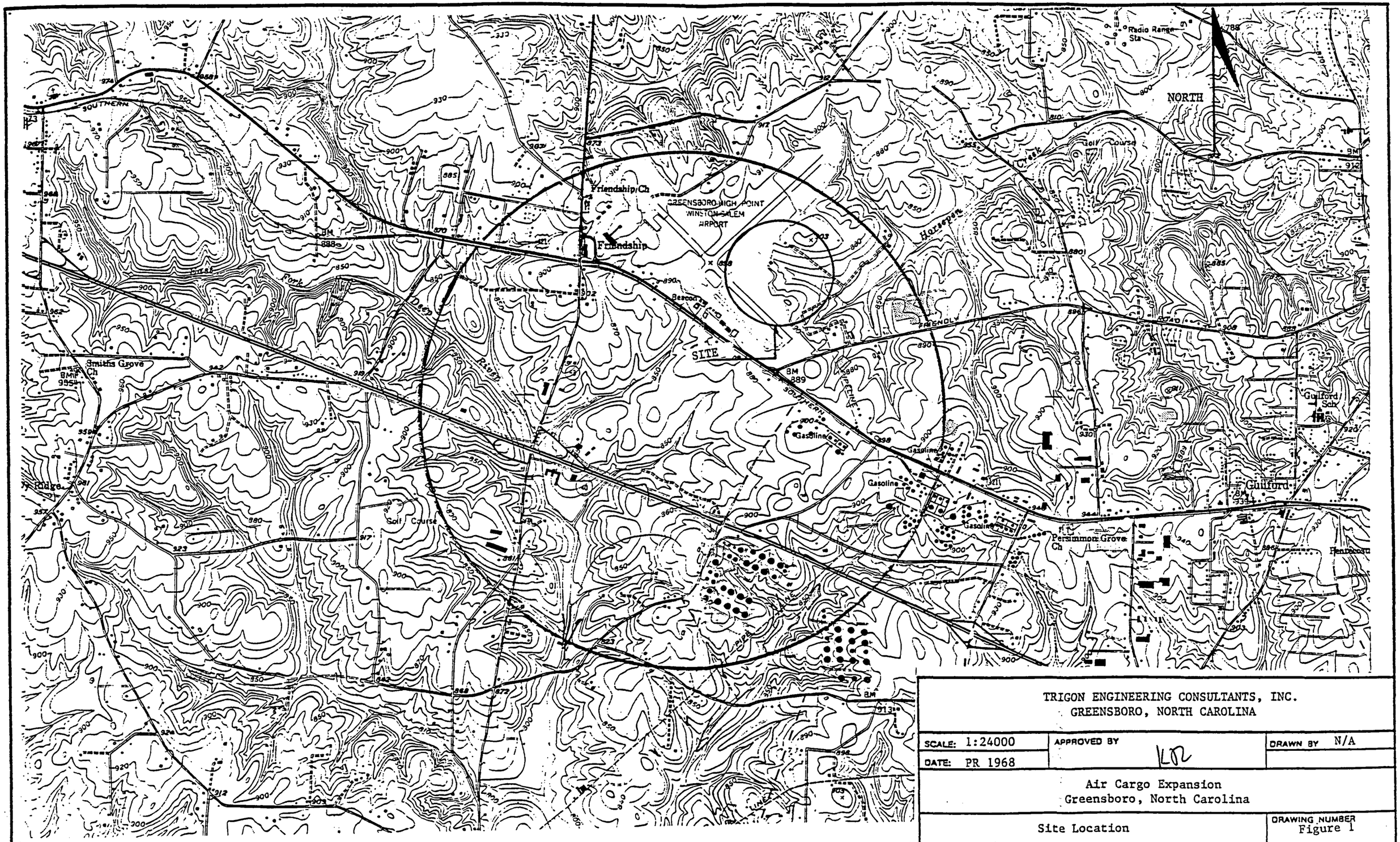
5.0 CONCLUSIONS AND RECOMMENDATIONS

Existing data from both field and laboratory analysis indicates the following: 1) The soil test borings by the three burn pits did not detect petroleum hydrocarbons during laboratory analysis. Therefore, with past borings and the latest borings, the approximate lateral extent of the petroleum hydrocarbon impact has been determined. 2) The soil samples taken during the piezometer installation for laboratory analysis did not detect petroleum hydrocarbons. With the soil samples being taken at the soil/groundwater interface, this would indicate that possible impact to the groundwater in the location by MW-1 is not apparently originating from the soil but could be present in the groundwater. 3) The soil sample taken in the wetland area for leachable metals did not reveal concentrations of metals above regulatory levels. Additionally, the surface water sample taken in the wetland area

adjacent to groundwater monitoring well MW-4 revealed petroleum hydrocarbons with a distillation range similar to varsol. The varsol type compound could be originating from the groundwater discharging into the wetland. 4) The test trenches performed in the solid waste on the ground surface and in the construction debris used as fill in the area adjacent to groundwater monitoring well MW-4 did not reveal any substance which would appear to cause impact to the area. 5) Soils with petroleum hydrocarbons above 2 mg/kg appear to have been removed from burn pits BP-2 and BP-3. The soil samples taken in burn pit BP-1 did indicate the presence of petroleum hydrocarbons in the range of 33 mg/kg to 34 mg/kg. The petroleum hydrocarbon was similar to a #2 fuel oil. Additionally, the soil samples taken at the termination depth in the excavation adjacent to groundwater monitoring well MW-3 revealed 750 mg/kg of material similar to varsol and 110 mg/kg similar to #2 fuel. The second sample taken in the soil excavation zone by MW-3 revealed less than 2 mg/kg of petroleum hydrocarbons. The contamination in the area by MW-3 could have been introduced from the former septic tank which was discovered during the soil removal in this area. The three burn pits and the area by MW-3 had approximately 2900 cubic yards of impacted soil removed. This soil is presently being stockpiled on the airport property. The soil is being stockpiled in accordance to specifications received by the Division of Environmental Management's Groundwater Section.

Trigon recommends the following work be performed as further investigation: 1) Resample groundwater monitoring wells MW-1 and MW-5. The analysis should be performed for total petroleum hydrocarbons and purgeable aromatics. This will assist in determining whether the petroleum hydrocarbon concentrations in the groundwater formally detected have increased or decreased; 2) Perform slug tests on groundwater monitoring wells MW-1 and MW-5. This will assist in determining the hydraulic conductivity in the immediate area, therefore allowing potential groundwater migration rates to be determined in the study area; 3) Abandon monitoring wells MW-4 and MW-2 due to the construction soon to begin at the site; 4) Construct an additional groundwater monitoring well downgradiant of the former location of groundwater monitoring well MW-3 to determine the extent of petroleum hydrocarbon impact which should be installed outside of the proposed construction zone.

FIGURES



TRIGON ENGINEERING CONSULTANTS, INC.
GREENSBORO, NORTH CAROLINA

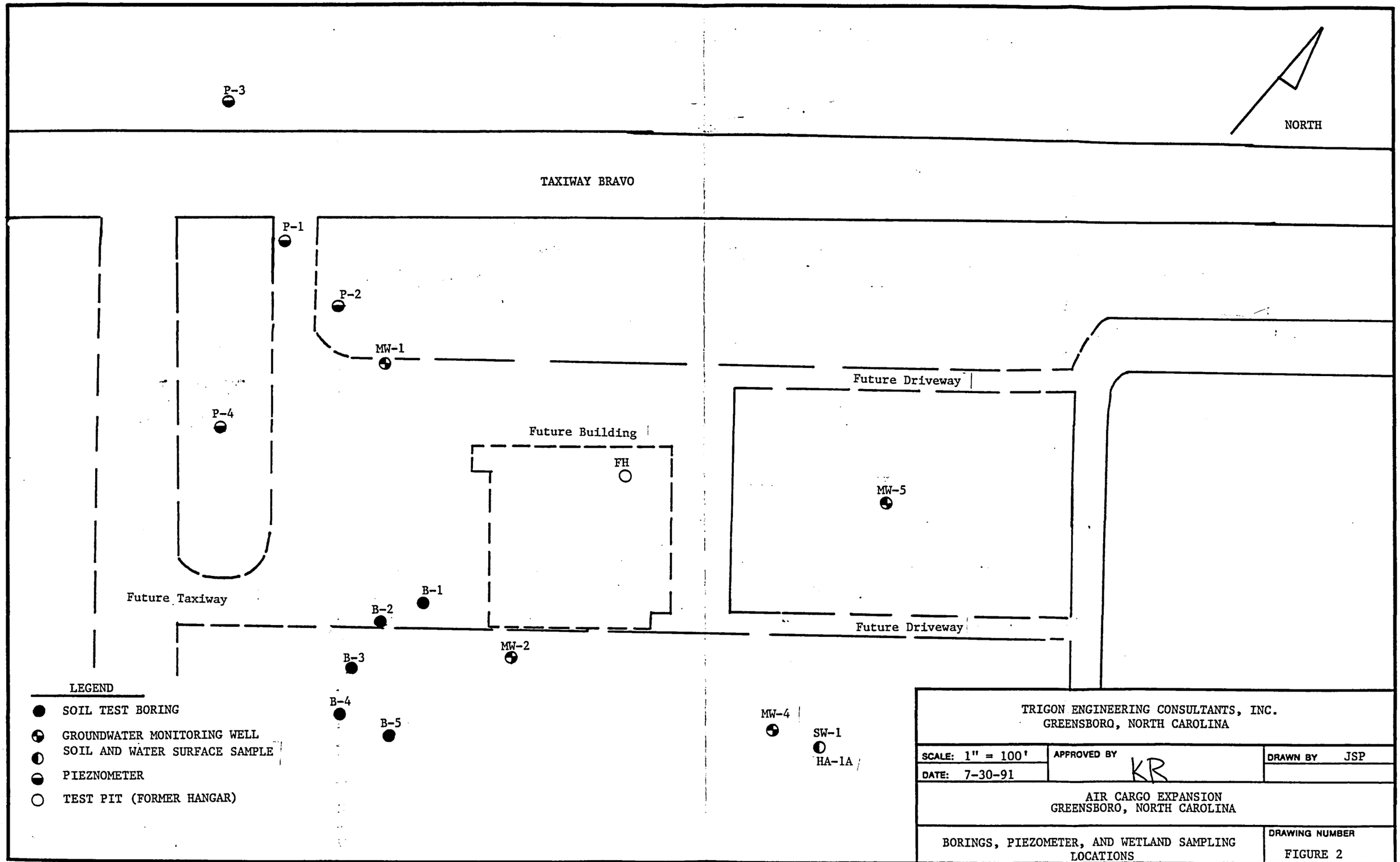
SCALE: 1:24000	APPROVED BY LSR	DRAWN BY N/A
DATE: PR 1968		

Air Cargo Expansion
Greensboro, North Carolina

Site Location

DRAWING NUMBER
Figure 1

TELEDYNE POST 18A8-08 – 11 x 17



TRIGON ENGINEERING CONSULTANTS, INC.
GREENSBORO, NORTH CAROLINA

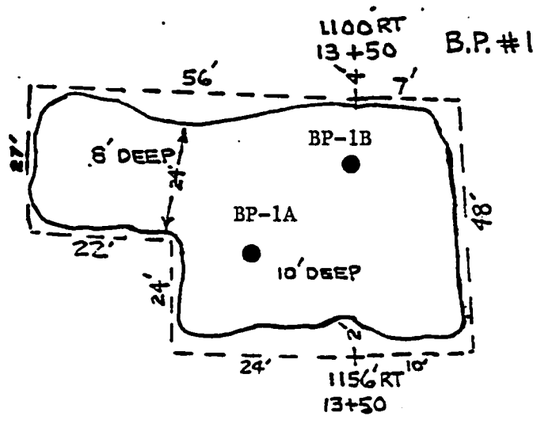
SCALE: 1" = 100'	APPROVED BY KR	DRAWN BY JSP
DATE: 7-30-91		

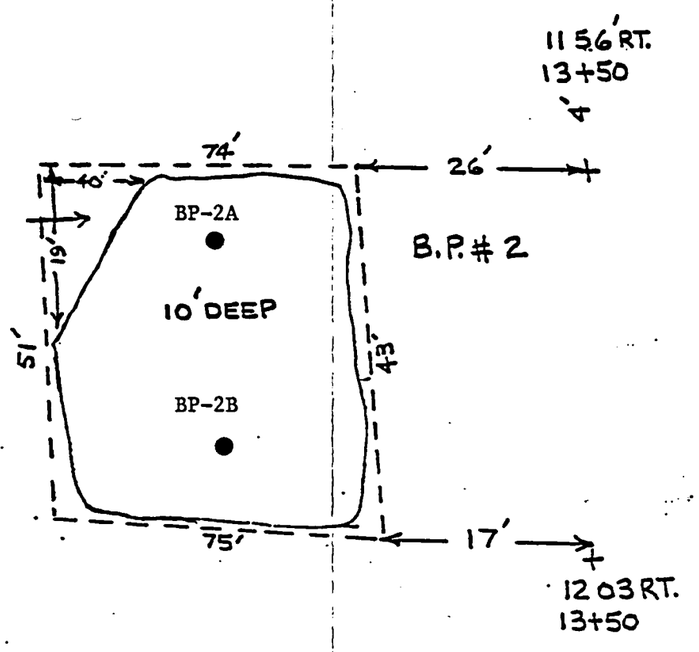
AIR CARGO EXPANSION
GREENSBORO, NORTH CAROLINA

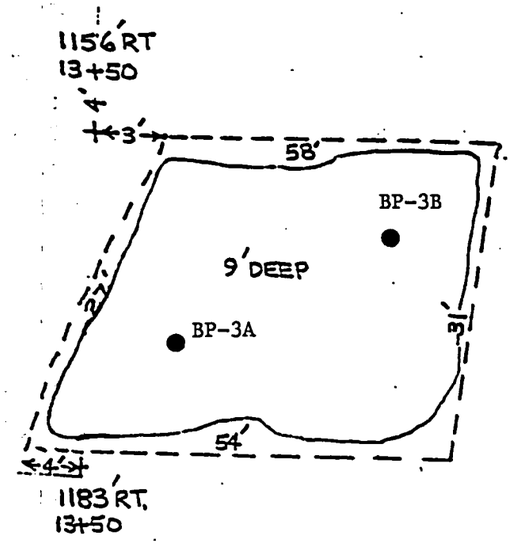
BORINGS, PIEZOMETER, AND WETLAND SAMPLING LOCATIONS

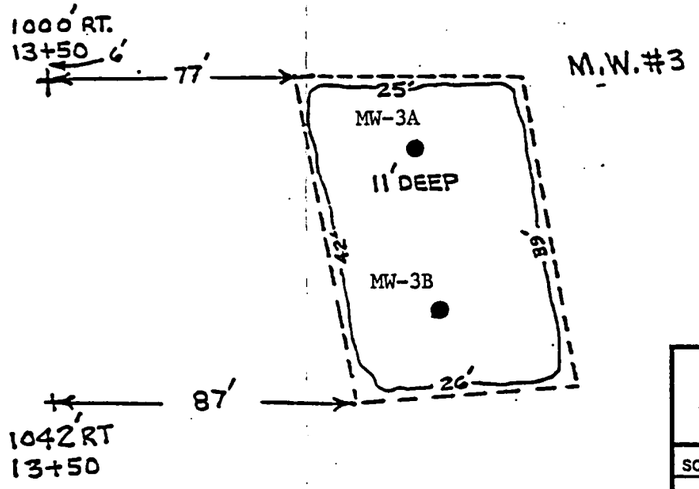
DRAWING NUMBER
FIGURE 2

TELEDYNE POST 18A8-08 – 11 x 17









LEGEND

Soil Sample ●

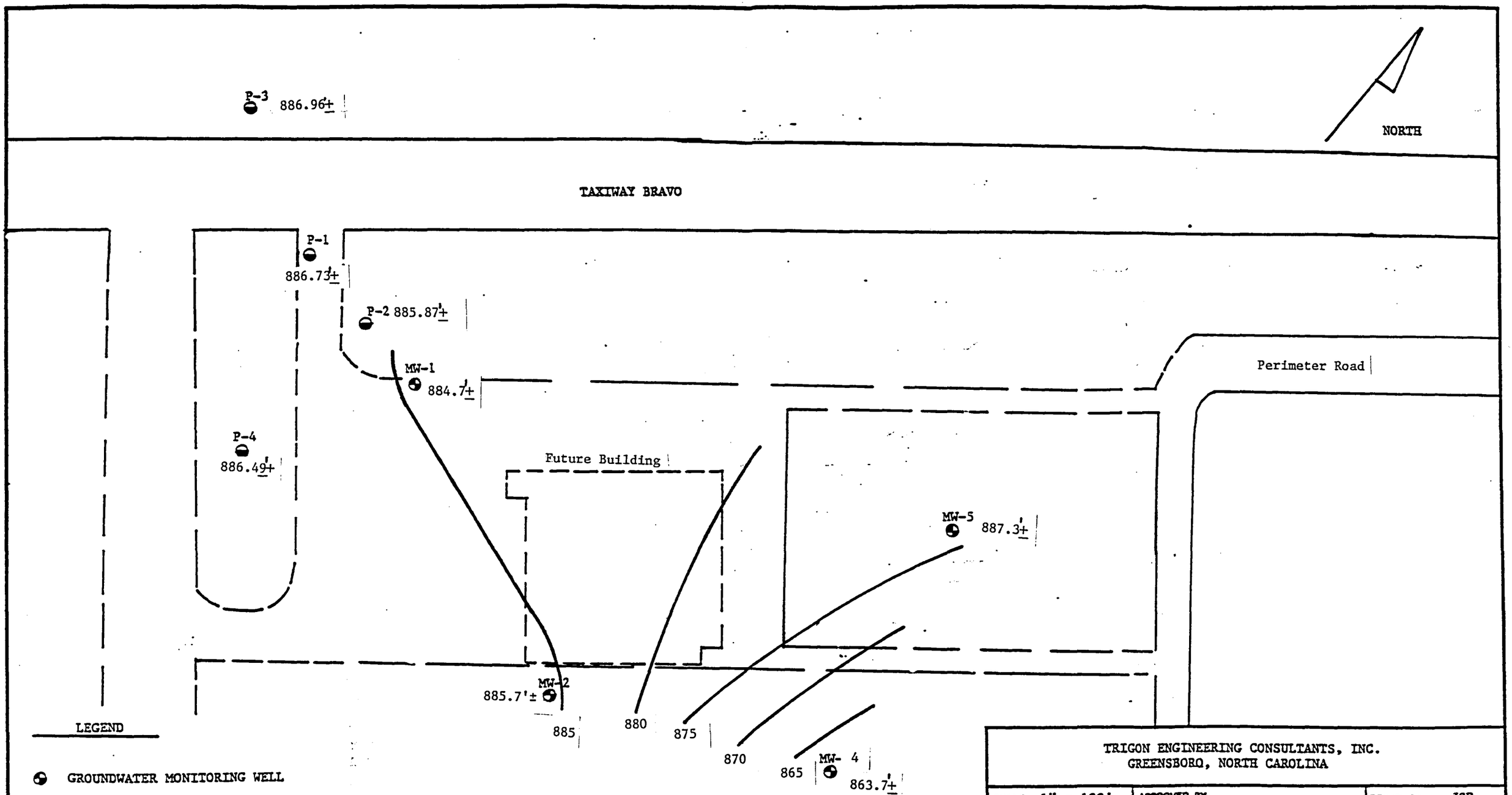
B.P.#1 - Burn Pit #1

B.P.#2 - Burn Pit #2

B.P.#3 - Burn Pit #3

M.W.#3 - Monitoring Well #3

TRIGON ENGINEERING CONSULTANTS, INC. GREENSBORO, NORTH CAROLINA		
SCALE: As Indicated DATE: 07/26/91	APPROVED BY KLR	DRAWN BY JSP
Air Cargo Expansion Greensboro, North Carolina		
Impacted Soil Removal Locations		DRAWING NUMBER Figure 3



TRIGON ENGINEERING CONSULTANTS, INC.
GREENSBORO, NORTH CAROLINA

SCALE: 1" = 100'	APPROVED BY KR	DRAWN BY JSP
DATE: 7-31-91		

AIR CARGO EXPANSION
GREENSBORO, NORTH CAROLINA

Elevations of the Groundwater Table

DRAWING NUMBER
FIGURE 4

TELEDYNE POST 18A8-08 – 11 x 17

TABLES

TRIGON ENGINEERING CONSULTANTS, INC.
SUMMARY OF OVA MONITORING
TABLE 1

Job Name: Air Cargo Expansion
Job Location: Greensboro, North Carolina
Job No: 015-91-036
Date: 5-10-91

Boring	Sample Number	Depth (feet)	OVA[1] (Field) (ppm)[2]	Comments
B-1	1	1.0 - 2.5	0	
	2	3.5 - 5.0	0	
	3	6.0 - 7.5	0	
	4	8.5 - 10.0	0	S.T. 5:00 PM
B-2	1	1.0 - 2.5	0	
	2	3.5 - 5.0	0	
	3	6.0 - 7.5	0	
	4	8.5 - 10.0	0	S.T. 5:00 PM
B-3	1	1.0 - 2.5	0	
	2	3.5 - 5.0	2	
	3	6.0 - 7.5	0	S.T. 5:00 PM
B-4	1	1.0 - 2.5	0	
	2	3.5 - 5.0	0	
	3	6.0 - 7.5	0	
	4	8.5 - 10.0	0	S.T. 5:00 PM
B-5	1	1.0 - 2.5	0	
	2	3.5 - 5.0	0	
	3	6.0 - 7.5	0	
	4	8.5 - 10.0	0	S.T. 5:00 PM

Notes: [1]Organic Vapor Analyzer (OVA) measures the concentration of organic vapors in the air.
[2]ppm = parts per million
S.T. = Sample Time
W.S. = Workspace
B.Z. = Breathing Zone

TRIGON ENGINEERING CONSULTANTS, INC.
SUMMARY OF OVA MONITORING
TABLE 2

Job Name: Air Cargo Expansion
Job Location: Greensboro, North Carolina
Job No: 015-91-036
Date: 5-10-91

Boring	Sample Number	Depth (feet)	OVA[1] (Field) (ppm)[2]	Comments
P-1	1	3.5 - 5.0	0	
	2	8.5 - 10.0	0.6	
	3	13.5 - 15.0	0	S.T. 10:20 AM
	4	18.5 - 20.0	0	
P-2	1	3.5 - 5.0	0	
	2	8.5 - 10.0	0	
	3	13.5 - 15.0	0.2	S.T. 12:53 PM
	4	18.5 - 20.0	0	
P-3	1	3.5 - 5.0	0	
	2	8.5 - 10.0	0	
	3	13.5 - 15.0	0	S.T. 2:10 PM
	4	18.5 - 20.0	0	
P-4	1	3.5 - 5.0	0	
	2	8.5 - 10.0	0	S.T. 3:30 PM
	3	13.5 - 15.0	0	

Notes: [1]Organic Vapor Analyzer (OVA) measures the concentration of organic vapors in the air.
[2]ppm = parts per million
S.T. = Sample Time
W.S. = Workspace
B.Z. = Breathing Zone

TRIGON ENGINEERING CONSULTANTS, INC.
SUMMARY OF OVA MONITORING
TABLE 3

Job Name: Air Cargo Expansion
Job Location: Greensboro, North Carolina
Job No: 015-91-036
Date: 5-30-91

Boring	Sample Number	Depth (feet)	OVA[1] (Field) (ppm)[2]	Comments
HA-1A	1	0 - 1.5	0	S.T. 11:40 AM
SW-1	1	surface	0	S.T. 11:46 AM
FH	1	15.0	0.2	S.T. 10:35 AM

Notes: [1]Organic Vapor Analyzer (OVA) measures the concentration of organic vapors in the air.
[2]ppm = parts per million
S.T. = Sample Time
W.S. = Workspace
B.Z. = Breathing Zone

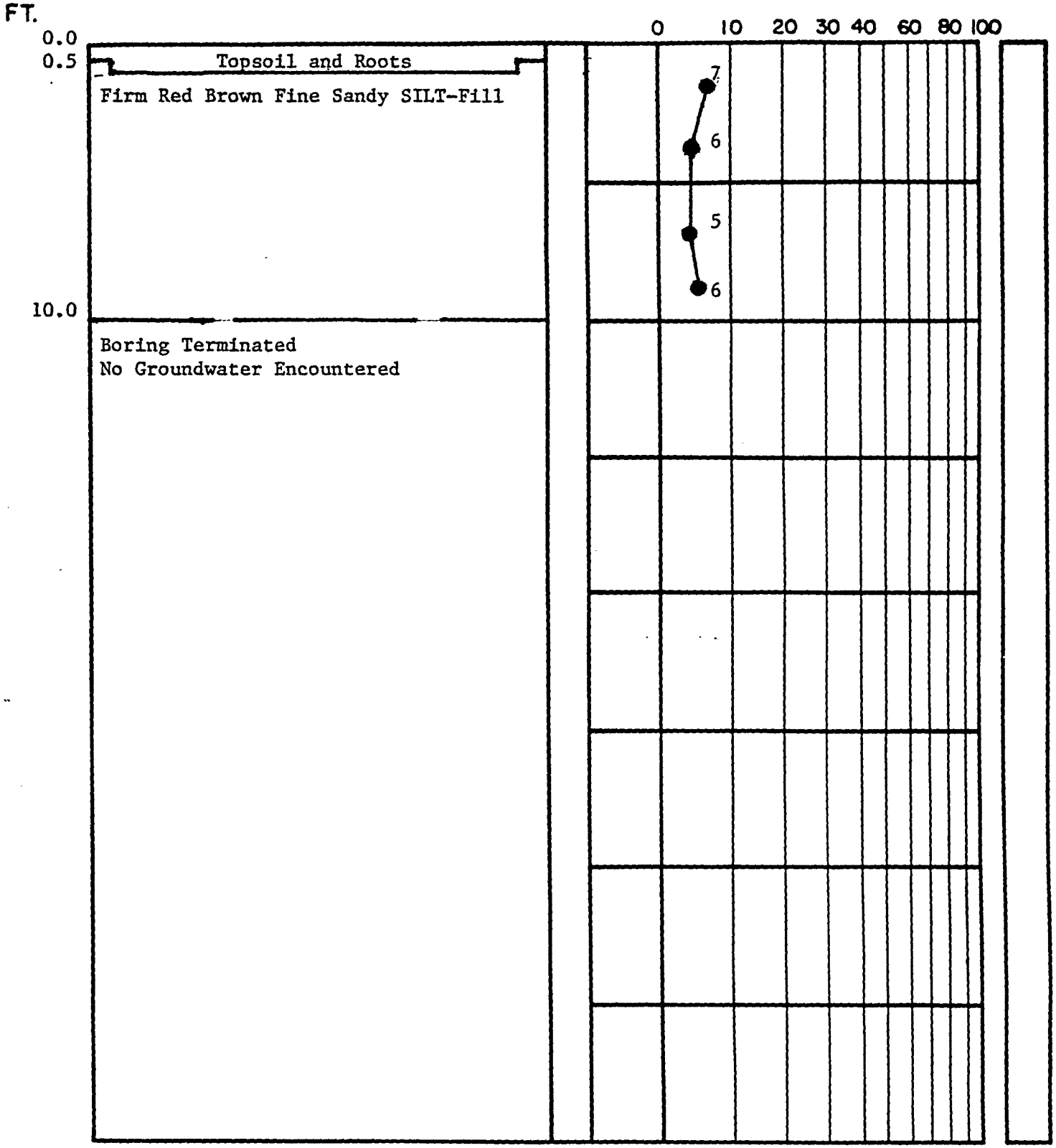
TRIGON ENGINEERING CONSULTANTS, INC.
SUMMARY OF OVA MONITORING
TABLE 4

Job Name: Air Cargo Expansion
Job Location: Greensboro, North Carolina
Job No: 015-91-036
Date: 6-6-91

Boring	Sample Number	Depth (feet)	OVA[1] (Field) (ppm)[2]	Comments
	BP-1A	8.0	0.2	10:04 AM
	BP-1B	10.0	0.4	10:09 AM
	BP-2A	10.0	0.4	9:35 AM
	BP-2B	10.0	28.0	9:10 AM
	BP-3A	9.0	0	9:44 AM
	BP-3B	10.0	0	9:48 AM
	MW-3A	10.0	300.0	9:53 AM
	MW-3B	10.0	0.8	9:58 AM
	FH	15.0	0.2	10:35 AM

Notes: [1]Organic Vapor Analyzer (OVA) measures the concentration of organic vapors in the air.
[2]ppm = parts per million
S.T. = Sample Time
W.S. = Workspace
B.Z. = Breathing Zone
B.P. = Burn Pit

APPENDIX A



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

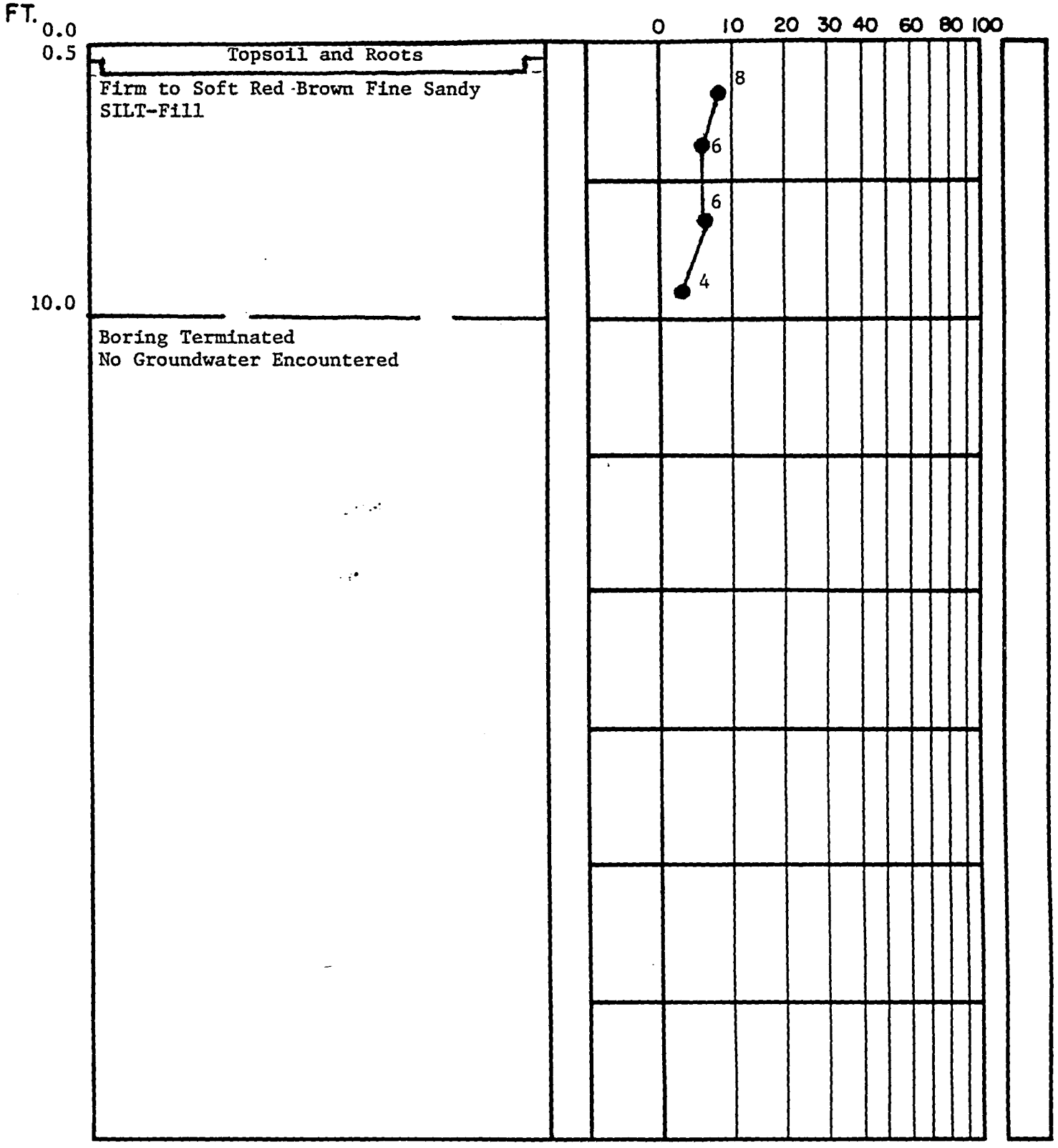
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24 HR.
WATER TABLE-1 HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. B-1
DATE DRILLED 05/10/91
JOB NO. 015-91-036

TRIGON



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

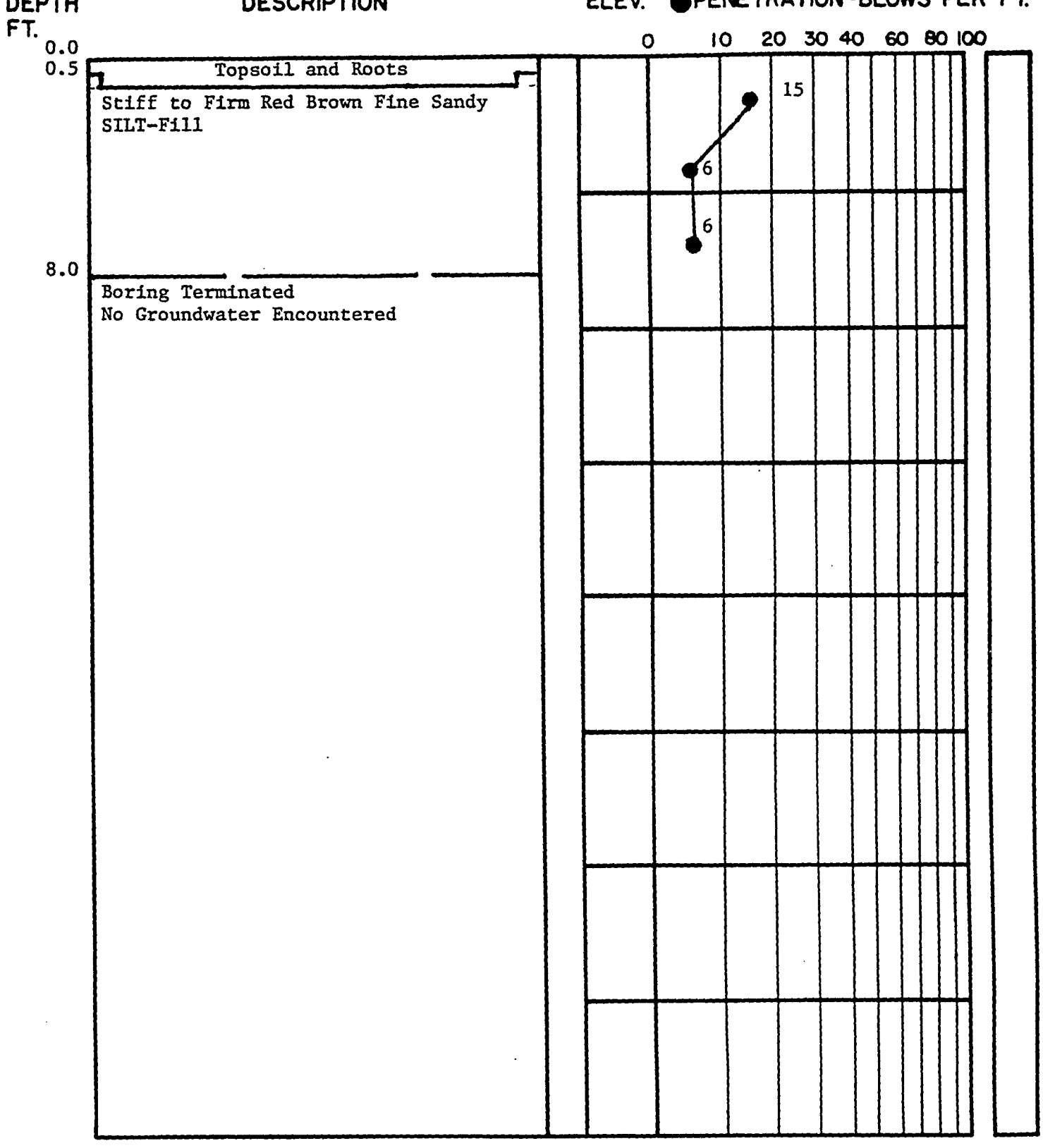
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24HR.
WATER TABLE-1HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. B-2
DATE DRILLED 05/10/91
JOB NO. 015-91-036

TRIGON



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

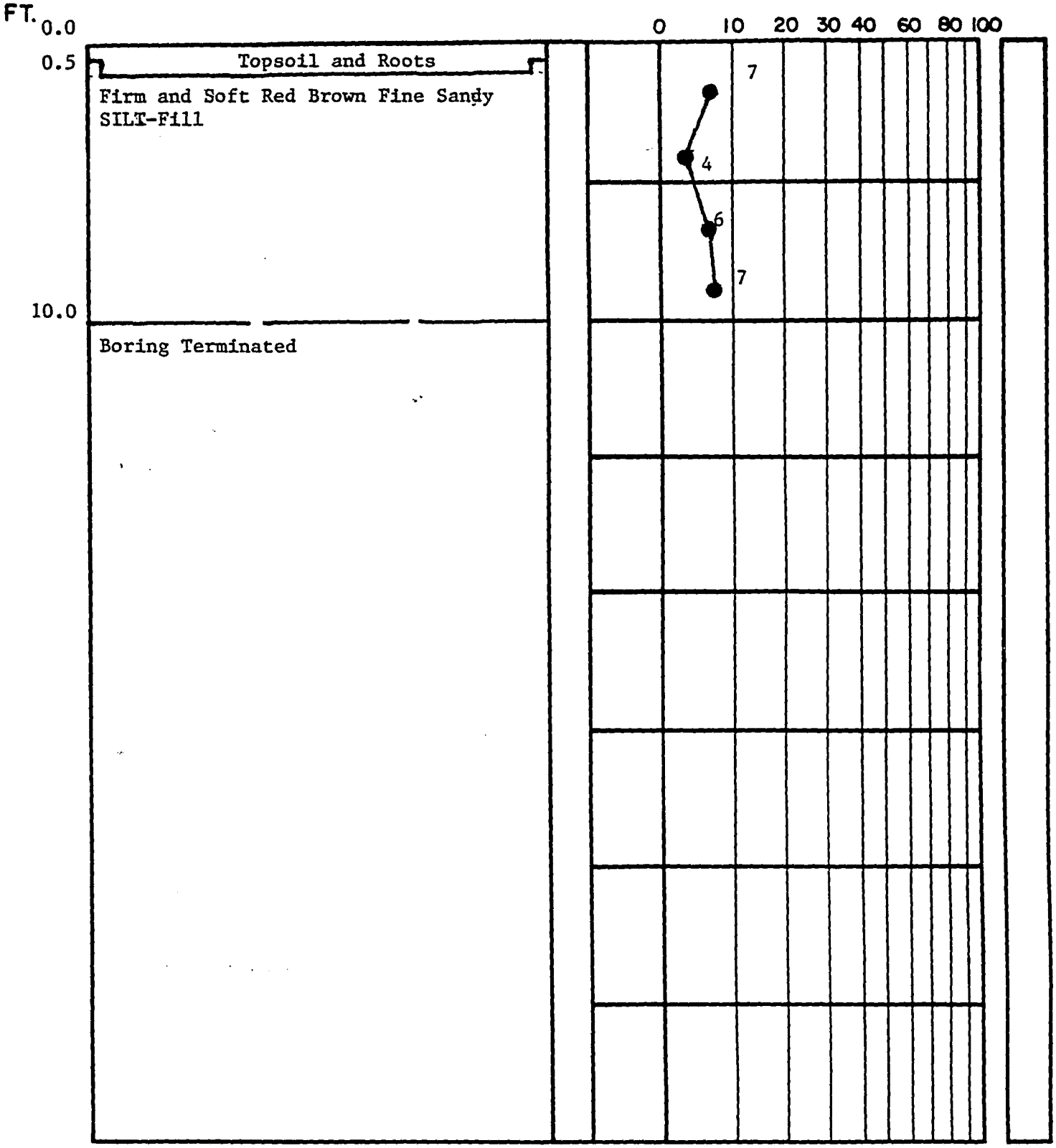
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24HR.
WATER TABLE-1HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. B-3
DATE DRILLED 05/10/91
JOB NO. 015-91-036

TRIGON



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

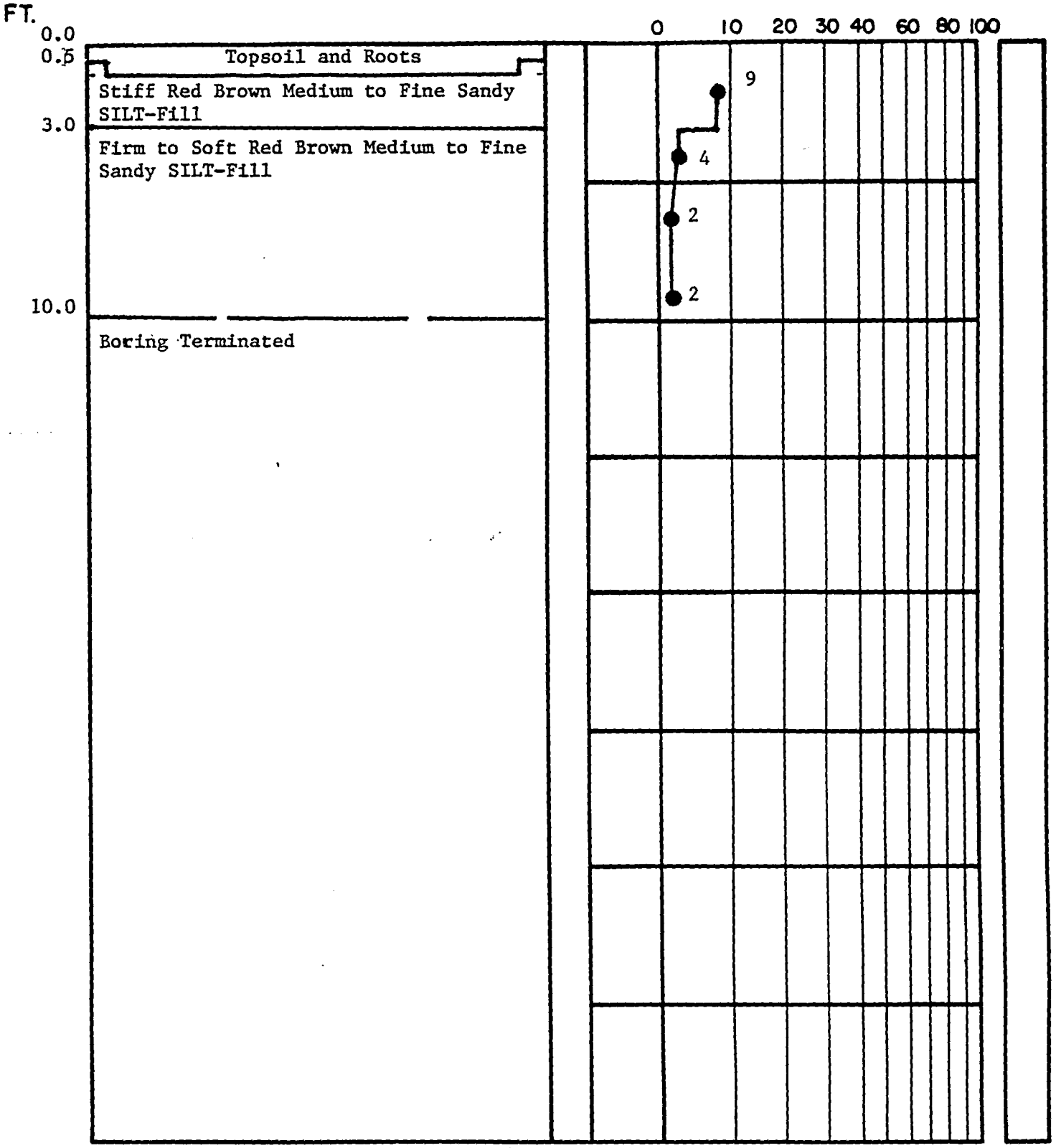
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24 HR.
WATER TABLE-1 HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. B-4
DATE DRILLED 05/10/91
JOB NO. 015-91-036

TRIGON



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

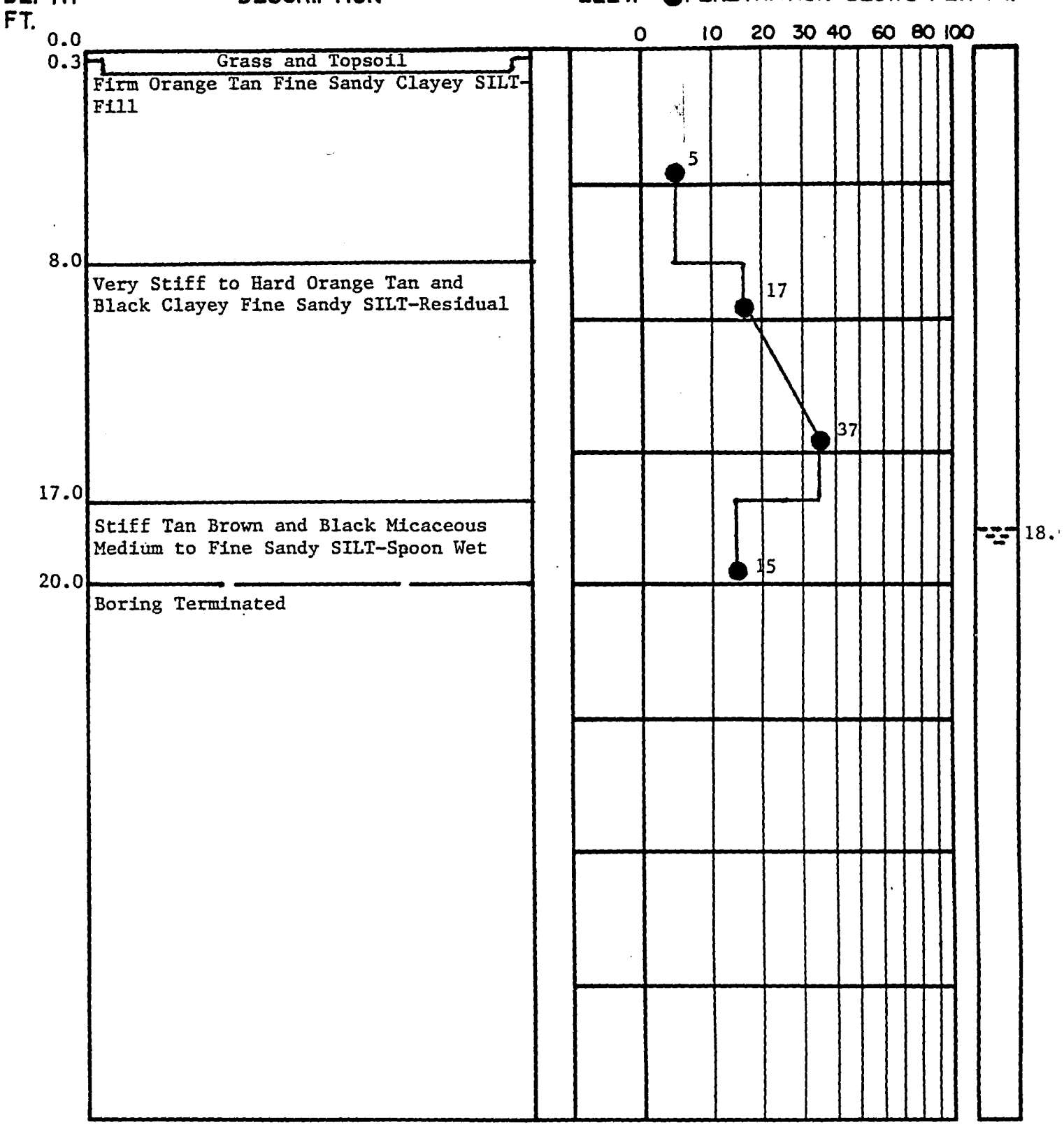
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24 HR.
WATER TABLE-1 HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. B-5
DATE DRILLED 05/10/91
JOB NO. 015-91-036

TRIGON



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

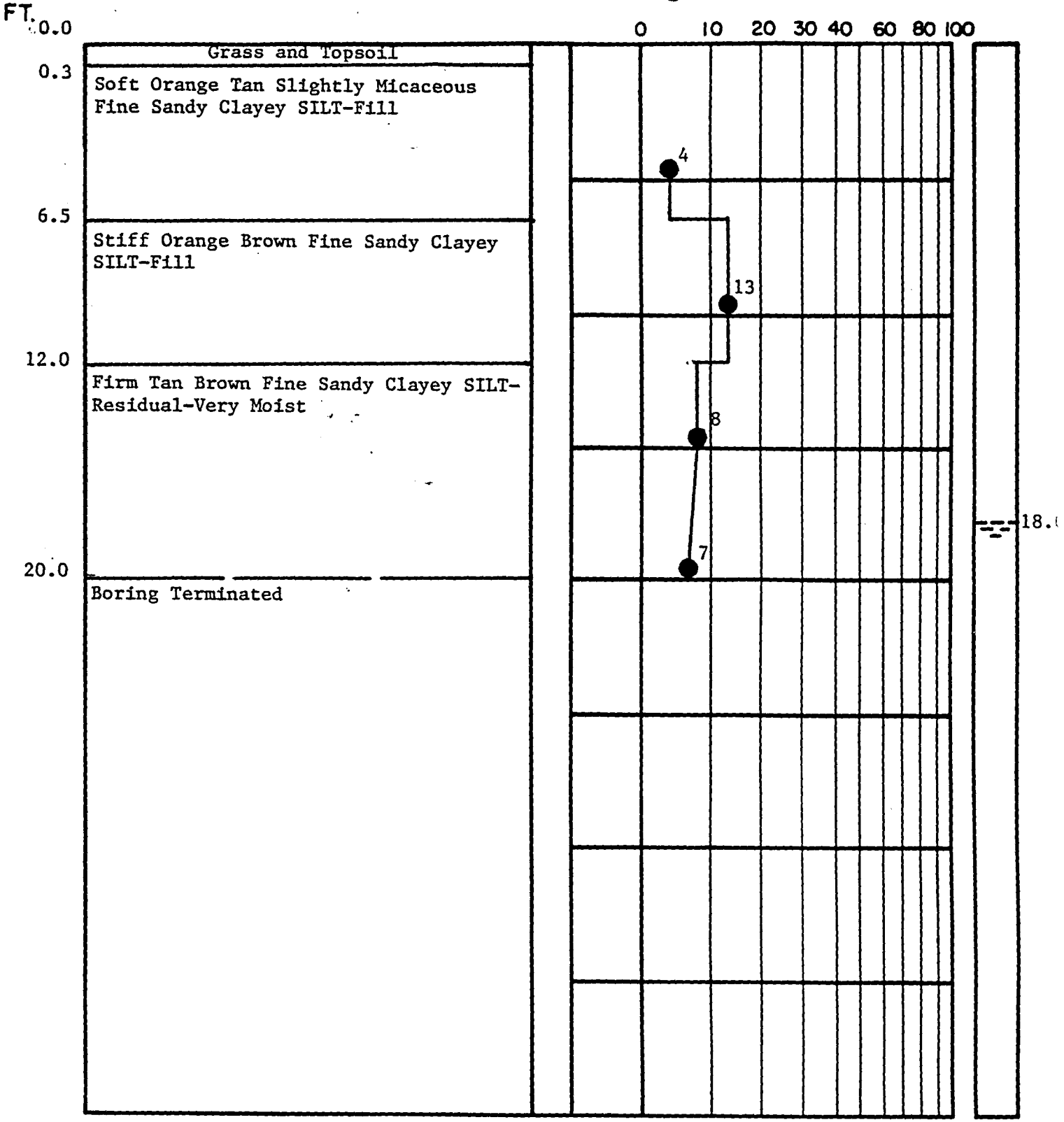
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24HR.
WATER TABLE-1HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. P-1
DATE DRILLED 05/24/91
JOB NO. 015-91-036

TRIGON



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

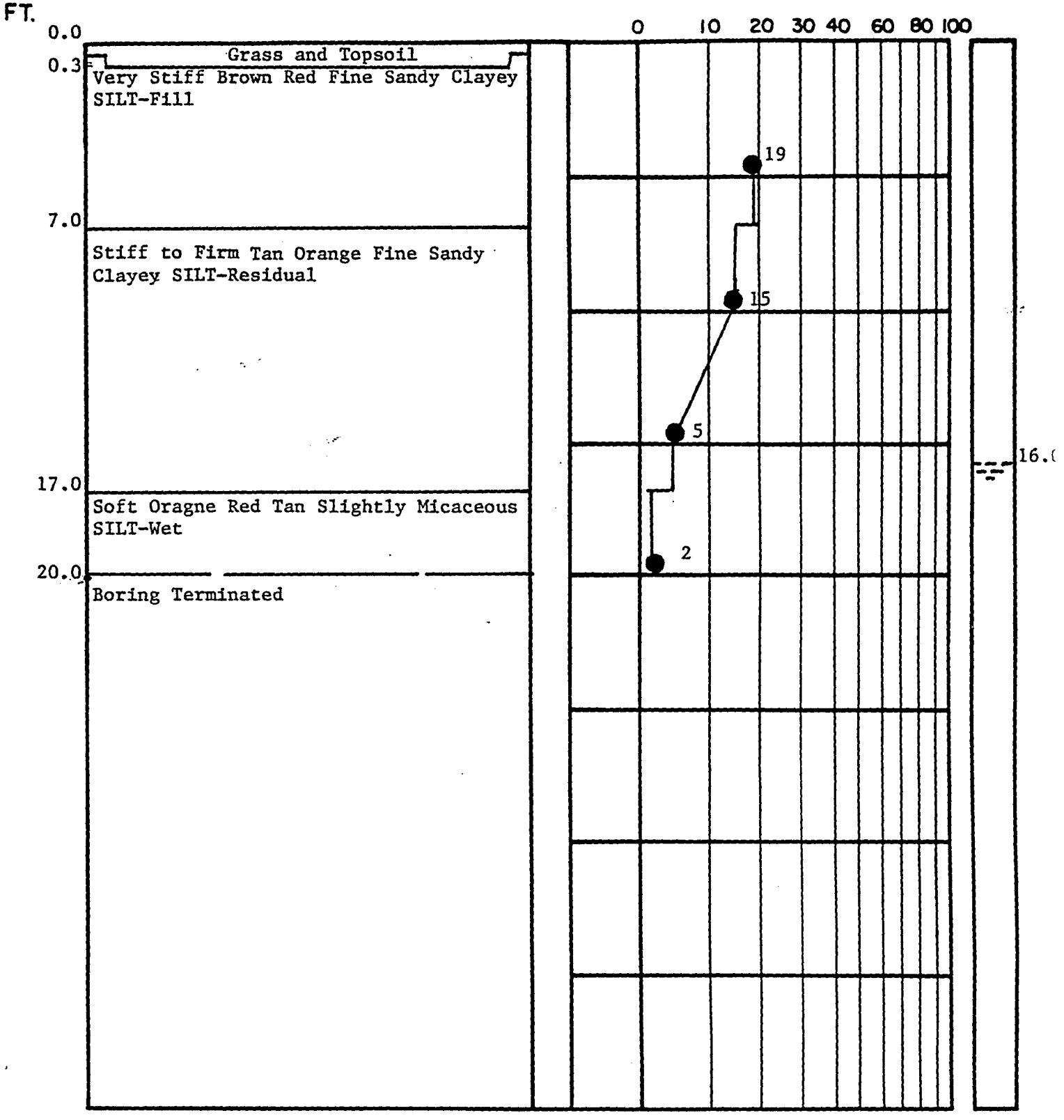
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24HR.
WATER TABLE-1HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. P-2
DATE DRILLED 05/24/91
JOB NO. 015-91-036

TRIGON



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

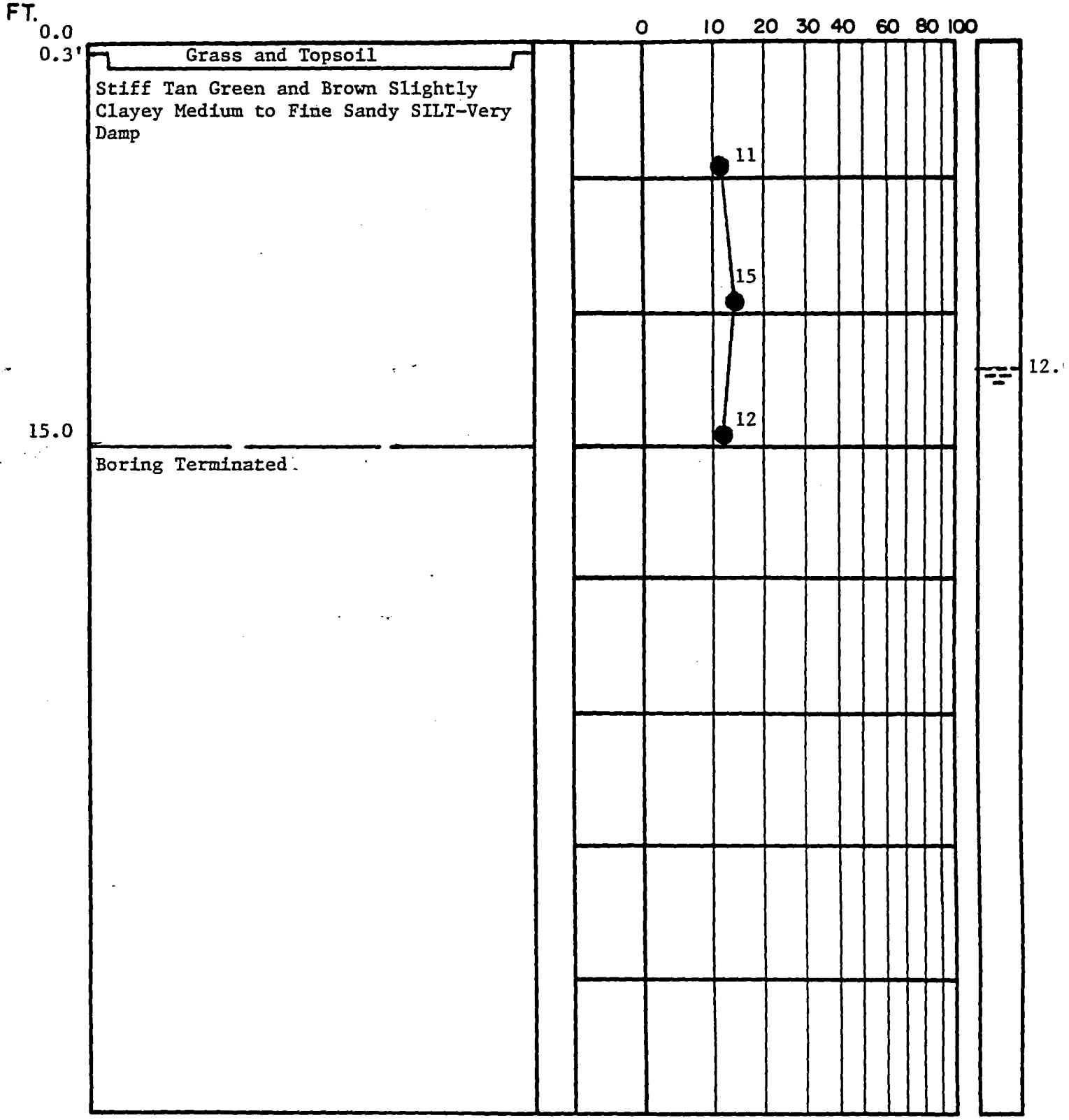
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24HR.
WATER TABLE-1HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. P-3
DATE DRILLED 05/24/91
JOB NO. 015-91-036

TRIGON



BORING AND SAMPLING MEETS ASTM D-1586
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% ROCK CORE RECOVERY
LOSS OF DRILLING WATER
WATER TABLE-24HR.
WATER TABLE-1HR.
CAVE-IN DEPTH

TEST BORING RECORD

BORING NO. P-4
DATE DRILLED 05/24/91
JOB NO. 015-91-036

TRIGON

APPENDIX B

an environmental testing company
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

May 22, 1991

Scott Pearce
Trigon Engineering, Inc.
313 Gallimore Dairy Rd.
Greensboro, NC 27419

Reference IEA Report No.: 471161
Project ID: 015-91-036

Dear Mr. Pearce,

Transmitted herewith are the results of analyses on five samples submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Julia D. Spring
for

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-161-1	Date Sampled:	Ø5-1Ø-91
Client Sample No:	B-1	Date Received:	Ø5-13-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø5-16-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø5-19-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø5-18-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-161-2	Date Sampled:	Ø5-1Ø-91
Client Sample No:	B-2	Date Received:	Ø5-13-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø5-16-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø5-19-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø5-18-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-161-3	Date Sampled:	Ø5-1Ø-91
Client Sample No:	B-3	Date Received:	Ø5-13-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø5-16-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø5-19-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø5-18-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-161-4	Date Sampled:	Ø5-1Ø-91
Client Sample No:	B-4	Date Received:	Ø5-13-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø5-16-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø5-19-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø5-18-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-161-5	Date Sampled:	05-10-91
Client Sample No:	B-5	Date Received:	05-13-91
Client Project No:	015-91-036	Date Extracted:	05-16-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: 05-19-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.0 mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: 05-18-91 Analyzed by: Joaquin

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 14910

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

PROJECT #	PROJECT NAME
315-91-036	Air Cargo Expansion-TRIAD

SAMPLERS: *(SIGNATURE)* Harold D. Smith

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS: TPH 5030/3550
B-1	5/10	5:00		X	B-1 - 8.5-10.0	3	X		X
B-2	5/10	5:00		X	B-2-8.5-10.0	3	X		X
B-3	5/10	5:00		X	B-3-~~8.5-10.0~~ 8.0	3	X		X
B-4	5/10	5:00		X	B-4-8.5-10.0	3	X		X
B-5	5/10	5:00		X	B-5-8.5-10.0	3	X		X

IEPA 471-161

RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED BY	DATE	TIME
T. J. Roberson	5/13	8:00	Bob S (PX)		
RELINQUISHED BY *(SIGNATURE)*	**DATE**	**TIME**	**RECEIVED FOR LAB BY**	**DATE**	**TIME**
			Rick Scott	5/13/91	12:00

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
SCOTT PEARCE	

IEA REMARKS

FIELD REMARKS

LEVEL 1
NORMAL TURNAROUND

APPENDIX C

an environmental testing company
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

June 6, 1991

Scott Pearce
Trigon Engineering, Inc.
313 Gallimore Dairy Rd.
Greensboro, NC 27419

Reference IEA Report No.: 471166
Project ID: 015-91-036

Dear Mr. Pearce,

Transmitted herewith are the results of analyses on four samples submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

IEA, Inc.

Julia G. Spring
for

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-166-1	Date Sampled:	Ø5-24-91
Client Sample No:	P-1	Date Received:	Ø5-28-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-Ø3-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-Ø4-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-Ø4-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-166-2	Date Sampled:	Ø5-24-91
Client Sample No:	P-2	Date Received:	Ø5-28-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-Ø3-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-Ø4-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-Ø4-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-166-3	Date Sampled:	Ø5-24-91
Client Sample No:	P-3	Date Received:	Ø5-28-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-Ø3-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-Ø4-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-Ø4-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-166-4	Date Sampled:	Ø5-24-91
Client Sample No:	P-4	Date Received:	Ø5-28-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-Ø3-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-Ø4-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-Ø4-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

CHAIN OF CUSTODY RECORD

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

NO: 21143

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

PROJECT #	PROJECT NAME
015-91-036	

SAMPLERS: *(SIGNATURE)*

J. Scott Pearce

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	REQUESTED PARAMETERS: TPH 5GC
P-1	5-24-91	10:20 AM		X	P-1 (13.5-15.0)	3	X		X
P-2	5-24-91	12:53 PM		X	P-2 (13.5-15.0)	3	X		X
P-3	5-24-91	2:10 PM		X	P-3 (13.5-15.0)	3	X		X
P-4	5-24-91	3:30 PM		X	P-4 (8.5-10.0)	3	X		X

IEA # 471-166

RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED BY	DATE	TIME
J. Scott Pearce	5-28-91	7:50 AM	Bob Sipe		
RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Bill Scott	5/28/91	12:00

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
J. SCOTT PEARCE	

IEA REMARKS

FIELD REMARKS

APPENDIX D

an environmental testing company
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

June 21, 1991

J. Scott Pearce
Trigon Engineering, Inc.
313 Gallimore Dairy Rd.
Greensboro, NC 27419

Reference IEA Report No.: 471168(0)
Project ID: 015-91-036

Dear Mr. Pearce,

Transmitted herewith are the results of analyses on one sample submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

IEA, Inc.

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

IEA LABORATORY RESULTS
TCLP SCREEN

IEA Project #: 471-168(0)
Client Name: Trigon Engineering, Inc.

Sample #	Client ID	Parameter	Regulatory Level	Results	Date Analyzed
		TCLP METALS:			
1	HA-1A	Arsenic	5.0 mg/L	<0.025 mg/L	06/16/91
1	HA-1A	Barium	100 mg/L	1.4 mg/L	06/11/91
1	HA-1A	Cadmium	1.0 mg/L	<0.05 mg/L	06/11/91
1	HA-1A	Chromium	5.0 mg/L	<0.15 mg/L	06/11/91
1	HA-1A	Mercury	0.2 mg/L	<0.0025 mg/L	06/08/91
1	HA-1A	Lead	5.0 mg/L	0.032 mg/L	06/09/91
1	HA-1A	Selenium	1.0 mg/L	<0.025 mg/L	06/16/91
1	HA-1A	Silver	5.0 mg/L	<0.25 mg/L	06/11/91

Comments:

*Please note that this report does not include matrix spike and corrected results as required in the TCLP Method (40 CFR, Part 261, Subpart C, Appendix I).

FORM TCLP-METLSCN Rev. 051591

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 19508

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

PROJECT #	PROJECT NAME
015-91-036	

SAMPLERS: *(SIGNATURE)*

J. Scott Pearce

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS: TCLP RCRA Metals (Screen)	REQUESTED PARAMETERS: TPH 8015 GC
HA-1A	5-30-91	11:40 AM		X	HA-1A	1	X		X	
SW-1	5-30-91	11:46 AM		X	SW-1	5		X		X

RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED BY	DATE	TIME
J. Scott Pearce	5-30-91		Rob S (PX)		
RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Christine DeKalb	5/31/91	1230

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
T. Scott Pearce	

IEA REMARKS

IEA 447-168: TPH
447-168(A): TCLP

FIELD REMARKS

1. Normal turnaround
2. Level I

an environmental testing company
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

June 11, 1991

Scott Pearce
Trigon Engineering, Inc.
313 Gallimore Dairy Rd.
Greensboro, NC 27419

Reference IEA Report No.: 471168
Project ID: 015-91-036

Dear Mr. Pearce,

Transmitted herewith are the results of analyses on one sample submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

IEA, Inc.

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-168-1	Date Sampled:	Ø5-3Ø-91
Client Sample No:	SW-1	Date Received:	Ø5-31-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-Ø5-91

Extraction (SW 846 - 351Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-Ø7-91 Analyzed by: McCutcheon

The sample contains a petroleum hydrocarbon blend with a distillation range similar to varsol. The concentration is 1.7 mg/L. The quantitation limit is Ø.Ø5Ø mg/L.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-Ø7-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is Ø.Ø5Ø mg/L.

Comment:

CHAIN OF CUSTODY RECORD

iea
an environmental testing company
3000 WESTON PKWY.
CARY, N.C. 27513

NO: 19508

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

PROJECT #	PROJECT NAME
015-91-036	

SAMPLERS: *(SIGNATURE)*

J. Scott Pearce

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS: TCLP RCRA Metals (5 total)	REQUESTED PARAMETERS: TPH by GC
HA-1A	5-30-91	11:40 AM		X	HA-1A	1	X		X	
SW-1	5-30-91	11:46 AM		X	SW-1	5		X		X

RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED BY	DATE	TIME
J. Scott Pearce	5-30-91		Rob S (PX)		
RELINQUISHED BY *(SIGNATURE)*	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Christine DeKraker	5/31/91	1230

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
J. Scott Pearce	

IEA REMARKS

IEA 447-168: TPH
447-168(A): TCLP

FIELD REMARKS

1. Normal turnaround
2. Level I

APPENDIX E

an environmental testing company
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

June 18, 1991

J. Scott Pearce
Trigon Engineering, Inc.
313 Gallimore Dairy Rd.
Greensboro, NC 27419

Reference IEA Report No.: 471171
Project ID: 015-91-036

Dear Mr. Pearce,

Transmitted herewith are the results of analyses on 12 samples submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

IEA, Inc.

Julia G. Spurig
for

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-1	Date Sampled:	Ø6-Ø6-91
Client Sample No:	BP-1A	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-13-91 Analyzed by: McCutcheon

The sample contains a petroleum hydrocarbon blend with a distillation range similar to #2 fuel oil. The concentration is 33 mg/kg.
The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-2	Date Sampled:	Ø6-Ø6-91
Client Sample No:	BP-1B	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-13-91 Analyzed by: McCutcheon

The sample contains a petroleum hydrocarbon blend with a distillation range similar to #2 fuel oil. The concentration is 34 mg/kg. The quantitation limit is 2.0 mg/kg.

Comment:

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Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.0 mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-3	Date Sampled:	Ø6-Ø6-91
Client Sample No:	BP-2A	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-4	Date Sampled:	Ø6-Ø6-91
Client Sample No:	BP-2B	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-13-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-5	Date Sampled:	Ø6-Ø6-91
Client Sample No:	BP-3A	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-13-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-6	Date Sampled:	Ø6-Ø6-91
Client Sample No:	BP-3B	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-13-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

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Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-7	Date Sampled:	Ø6-Ø6-91
Client Sample No:	MW-3A	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample contains a petroleum hydrocarbon blend with a distillation range similar to varsol. The concentration is 750 mg/kg. The quantitation limit is 100 mg/kg.

Comment:

Quantitation limit elevated due to extract dilution prior to analysis. Extract diluted due to the presence of target compounds.

==========

Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-7	Date Sampled:	Ø6-Ø6-91
Client Sample No:	MW-3A	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample contains a petroleum hydrocarbon blend with a distillation range similar to #2 fuel oil. The concentration is 11Ø mg/kg. The quantitation limit is 1ØØ mg/kg.

Comment:

Quantitation limit elevated due to extract dilution prior to analysis. Extract diluted due to the presence of target compounds.

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-8	Date Sampled:	Ø6-Ø6-91
Client Sample No:	MW-3B	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 355Ø) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-13-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

==========

Purge and Trap (SW 846 - 5Ø3Ø) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

iea

Total Petroleum Hydrocarbon Analysis

IEA Sample No:	471-171-12	Date Sampled:	Ø6-Ø6-91
Client Sample No:	FH	Date Received:	Ø6-Ø7-91
Client Project No:	Ø15-91-Ø36	Date Extracted:	Ø6-12-91

Extraction (SW 846 - 3550) / GC-FID analysis (for #2 fuel oil,kerosene,varsol)
Date Analyzed: Ø6-13-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend in the distillation range referenced above. The quantitation limit is 2.Ø mg/kg.

Comment:

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Purge and Trap (SW 846 - 5030) / GC-FID analysis (for gasoline only)
Date Analyzed: Ø6-14-91 Analyzed by: McCutcheon

The sample does not contain a petroleum hydrocarbon blend with a distillation range similar to gasoline. The quantitation limit is 2.Ø mg/kg.

Comment:

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
3000 WESTON PKWY.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 14785

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

PROJECT #	PROJECT NAME
015-91-036	

SAMPLERS: (SIGNATURE)
J. Scott Pearce

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS: TPH 6,5,C
BP-1A	6-6-91			X	BP-1A	2	X		X
BP-1B	6-6-91			X	BP-1B	2	X		X
BP-2A	6-6-91			X	BP-2A	2	X		X
BP-2B	6-6-91			X	BP-2B	2	X		X
BP-3A	6-6-91			X	BP-3A	2	X		X
BP-3B	6-6-91			X	BP-3B	2	X		X
MW-3A	6-6-91			X	MW-3A	2	X		X
MW-3B	6-6-91			X	MW-3B	2	X		X

IEP#471-171

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
J. Scott Pearce	6-7-91	8:00 AM	Don S (PX)		
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Bill Scott	6/7/91	12:00

IEA QUOTE NO.	IEA RUSH NO.
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
J. Scott Pearce	

IEA REMARKS

FIELD REMARKS

1. Level I
2. Normal Turnaround


TRIGON